FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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Document Number: 403438351
Receive Date: 07/11/2023
Report taken by: Kyle Waggoner

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.
This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.
This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.
Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATON

Name of Operator: TIMKA RESOURCES LTD Operator No: 88370
Address: 2077 BAYFRONT DR
City: WINDSOR State: CO Zip: 80550
Contact Person: Todd Pivonka Email: tpivonka@outlook.com

Phone Numbers
Phone: (970) 590-5617
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21572 Initial Form 27 Document #: 402924704

PURPOSE INFORMATION

- [ ] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [ ] Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- [X] Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- [ ] Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- [ ] Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- [ ] Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- [ ] Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- [ ] Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- [X] Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- [ ] Rule 913.g: Changes of Operator.
- [ ] Rule 915.b: Request to leave elevated inorganics in situ.
- [ ] Other:

SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT Facility ID: 116366 API #: County Name: LOGAN
Facility Name: BARNHART 1 Latitude: 40.638892 Longitude: -103.544120
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NENE Sec: 29 Twp: 8N Range: 55W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL Facility ID: API #: 075-08933 County Name: LOGAN
Facility Name: BARNHART ET AL 1 Latitude: 40.638360 Longitude: -103.545080
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NENE Sec: 29 Twp: 8N Range: 55W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Pasture

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

Nearest Domestic well: Approx. 850 NE of tank battery (permit 73342) Water recorded at 62 feet in 1974
Unnamed Surface Water/ Drainage Basin ~ 500 ft south of Wellhead
Not within any high priority habitats
Two freshwater ponds within 0.5 mile radius of site (west and east)
Located within Stoneham-Cushman Complex, 3 to 9 percent slopes

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [ ] **E&P Waste**
  - [ ] Produced Water
  - [ ] Oil
  - [ ] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [X] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [X] Pit Bottoms
  - [ ] Other (as described by EPA) _____
- [ ] **Non-E&P Waste** _____

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	pit	analytical samples

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Approximately 3,300 cubic yards of soil with petroleum hydrocarbon impacts within the produced water pit was excavated and transported to an approved landfill for disposal. A confining layer was encountered at approximately 20 feet below ground surface and laboratory analytical results were below Table 15-1 standards at that depth. Therefore a pathway to groundwater is not present and the Table 915-1 Residential Soil Screening Concentration Levels should apply. Confirmation sample analytical data demonstrate that all petroleum hydrocarbon impacted soil has been mitigated through excavation and disposal. Earthen containment berm material around the former produced water pit with soil concentrations exceeding certain Table 915-1 soil suitability parameters is proposed to be backfilled within the produced water pit excavation as described in the attached Reclamation Plan. The earthen berm soil will be amended with Gypsum and backfilled and compacted in the bottom portion of the excavation on top of the confining layer. Clean fill material will be used up to 3-feet below ground surface and organic topsoil will be used within the top 3-feet. Details of the proposed reclamation activities are provided in the attached Reclamation Plan.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

- [ ] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Soil samples were collected from the locations illustrated on the attached site figures and submitted for laboratory analysis of the Table 915-1 list of constituents. A confining layer was encountered at 20 feet bgs and was below the Table 915-1 standards. Therefore, the Residential Soil Screening Level Concentrations should apply. The laboratory analytical results are provided in the attached summary tables and analytical reports. Based on the analytical results, some soil suitability constituents are above the Table915-1 standards but all other analytes with the exception of arsenic which is naturally occurring, were below regulations. Therefore, a reclamation plan to bury soil with elevated soil suitability standards has been provided as an attachment to this Form 27 Supplemental report.

Proposed Groundwater Sampling

- [ ] Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Groundwater was not encountered during excavation or sampling activities. Depth to groundwater is estimated at greater than 70 feet bgs.

Proposed Surface Water Sampling

- [ ] Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

- [ ] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 23

Number of soil samples exceeeding 915-1 13

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 11628

NA / ND

-- Highest concentration of TPH (mg/kg) 8500

-- Highest concentration of SAR 75.6

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 12

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

Highest concentration of Benzene (µg/l)

Highest concentration of Toluene (µg/l)

Highest concentration of Ethylbenzene (µg/l)

Highest concentration of Xylene (µg/l)

Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

[ ] Were impacts to adjacent property or offsite impacts identified?

[X] Were background samples collected as part of this site investigation?

Two background samples were collected at 3 feet and 6 feet bgs and submitted for soil suitability parameters (EC, SAR, pH, Boron). In addition, three background samples were taken at 3 feet bgs to the west, east, and south of the facility and tested for soil suitability and agronomic parameters. The laboratory results for the agronomic properties are summarized in the Reclamation Plan and the laboratory report is included as an attachment therein.

[X] Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) 3300 Volume of liquid waste (barrels) 0

[ ] Is further site investigation required?

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Approximately 3,300 cubic yards of petroleum hydrocarbon impacted soil was removed from the site for disposal at the Pawnee Waste Landfill. Soils that remain on-site that are above the Table 915-1 for some soil suitability standards and arsenic are will be mitigated as described in the attached Reclamation Plan for the Site.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Petroleum hydrocarbon impacted soil in the produced water pit was removed for disposal and a confining layer was encountered at 20 feet bgs. Soil samples from the excavation extents demonstrate that all petroleum hydrocarbon impacted soil has been removed. Remaining soil with elevated concentrations of the soil suitability standards will be mitigated in accordance with the attached proposed reclamation plan.

Soil Remediation Summary

[ ] **In Situ**

Bioremediation (or enhanced bioremediation)

Chemical oxidation

[X] **Ex Situ**

Yes Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) 3300

	Air sparge / Soil vapor extraction		Name of Licensed Disposal Facility or COGCC Facility ID #
	Natural Attenuation	Yes	Excavate and onsite remediation
	Other	No	Land Treatment
		No	Bioremediation (or enhanced bioremediation)
		No	Chemical oxidation
		Yes	Other: Earthen berm material will be mixed with gypsum and buried within the open excavation.

Groundwater Remediation Summary

	Bioremediation (or enhanced bioremediation)
	Chemical oxidation
	Air sparge / Soil vapor extraction
	Natural Attenuation
	Other

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] Quarterly [ ] Semi-Annually [ ] Annually [ ] Other

[ ] **Request Alternative Reporting Schedule:**

[ ] Semi-Annually [ ] Annually [ ] Other

Rule 913.e:
After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type: [ ] Groundwater Monitoring [ ] Land Treatment Progress Report [ ] O&M Report

[X] Other Remediation Report and Proposed Reclamation Plan

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).
If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Operator carries $1,000,000.00 of general liability insurance coverage and $4,000,000.00 in Excess coverage.

Operator anticipates the remaining cost for this project to be: $ 50000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Petroleum hydrocarbon impacted soil was disposed of at an approved landfill. Remaining soil will be buried and mixed with gypsum in accordance with the attached proposed Reclamation Plan.

Volume of E&P Waste (solid) in cubic yards 3300

E&P waste (solid) description Petroleum Hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Pawnee Waste, LLC

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

[ ] Compliant with Rule 913.h.(1).

[ ] Compliant with Rule 913.h.(2).

[ ] Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted?

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Reclamation will include backfilling and compaction activities as described in the attached proposed Reclamation Plan. Organic topsoil, ripping, and reseeding will be performed at the site as described in the Reclamation Plan. The site will be monitored until 80% revegetation is accomplished.

Is the described reclamation complete? No

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim ☐ Final

Did the Surface Owner provide the seed mix?

If YES, does the seed mix comply with local soil conservation district recommendations?

Did the local soil conservation district provide the seed mix? Yes

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 07/01/2001

Proposed date of completion of Reclamation. 04/30/2024

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required.

Actual Spill or Release date, or date of discovery.

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/13/2022

Proposed site investigation commencement. 07/13/2022

Proposed completion of site investigation. 05/23/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/13/2022

Proposed date of completion of Remediation. 05/23/2023

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

Approximately 3,300 cubic yards of soil with petroleum hydrocarbon impacts within the produced water pit was excavated and transported to an approved landfill for disposal. A confining layer was encountered at approximately 20 feet below ground surface and laboratory analytical results were below Table 15-1 standards at that depth. Therefore a pathway to groundwater is not present and the Table 915-1 Residential Soil Screening Concentration Levels should apply. Confirmation sample analytical data demonstrate that all petroleum hydrocarbon impacted soil has been mitigated through excavation and disposal. Earthen containment berm material around the former produced water pit with soil concentrations exceeding certain Table 915-1 soil suitability parameters is proposed to be backfilled within the produced water pit excavation as described in the attached Reclamation Plan. The earthen berm soil will be amended with Gypsum and backfilled and compacted in the bottom portion of the excavation on top of the confining layer. Clean fill material will be used up to 3-feet below ground surface and organic topsoil will be used within the top 3-feet. Details of the proposed reclamation activities are provided in the attached Reclamation Plan.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Drezden Kinnaird Title: Consultant

Submit Date: 07/11/2023 Email: dkinnaird@cgrs.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Kyle Waggoner Date: 08/31/2023

Remediation Project Number: 21572

COA Type	Description
	Operator shall collect confirmation soil samples as described in the Rule 915.e.(2) Guidance Document. Operator will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)).
	As stated in Doc# 403346029, any soil that is impacted and exceeds the thresholds in Table 915-1 cannot be buried. Proper disposal of oil waste must be treated or disposed of in accordance with Rule 905.e.
	Closure request removed. Operator shall submit reports of site investigation including all laboratory analytical results for all samples collected, per Rule 913.h.(4).A.. Per the 900 Series rules 915.e "... Analyses of samples will be performed by laboratories that maintain state or national accreditation programs.." The main accreditation programs are National Environmental Laboratory Accreditation Program (NELAP) and National Environmental Laboratories Accreditation Conference (NELAC). Not only is this accreditation required the lab has to be accredited for each specific analyte.
3 COAs	

Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num	Name
403438351	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403458925	ANALYTICAL RESULTS
403458927	MAP
403459490	ANALYTICAL RESULTS
403459601	RECLAMATION PLAN
403517681	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

General Comments

User Group	Comment	Comment Date
Environmental	ECMC approves Operator’s request for use of Residential SSLs based on the depth to groundwater and the local lithology suggesting a pathway to groundwater at this location is not likely.	08/29/2023

Total: 1 comment(s)